METHODS OF HYDROGEN CLEANING OF METALLIC SURFACES

ABSTRACT OF THE DISCLOSURE

The pulsed partial pressure hydrogen cleaning of cobalt-based alloys in turbine components is achieved by disposing the component within a vacuum furnace and heating the component. Upon heating to about 1400°F, a partial pressure hydrogen gas and a vacuum are repetitively cycled within the furnace by supplying in each cycle a fresh supply of hydrogen gas, followed by removal of reaction products between the hydrogen gas and surface contaminants and substantially all residual hydrogen gas from within the furnace. The repetitious cycling renders the surfaces clean, enabling refurbishment thereof by activated diffusion healing repair.